

Dimensions : Inches (Millimetres)

## Features:

- Plastic package
- Exceeds environmental standards of MIL-STD-19500
- 600 W surge capability at  $10 \times 1,000 \mu\text{s}$  waveform, duty cycle: 0.01%
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1.0 ps from 0 V to VBR for unidirectional and 5 ns for bidirectional
- Typical  $I_R$  less than  $1 \mu\text{A}$  above 10 V
- High temperature soldering guaranteed:  $260^\circ\text{C} / 10$  seconds / 0.375 Inched (9.5 mm) lead length/5lbs. (2.3 kg) tension

## Mechanical Data

Case : Molded plastic  
 Lead : Pure tin plated lead free, solderable per MIL-STD-202, Method 208  
 Polarity : Color band denotes cathode except bipolar  
 Weight : 0.42 g

## Maximum Ratings and Electrical Characteristics

Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.  
 Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A = 25^\circ\text{C}$ , $T_p = 1\text{ms}$ (Note 1)	$P_{PK}$	Minimum 600	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375 Inch 9.5 mm (Note 2)	$P_D$	5	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 3)	$I_{FSM}$	100	Amps
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only (Note 4)	$V_F$	3.5 / 5	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +175	$^\circ\text{C}$

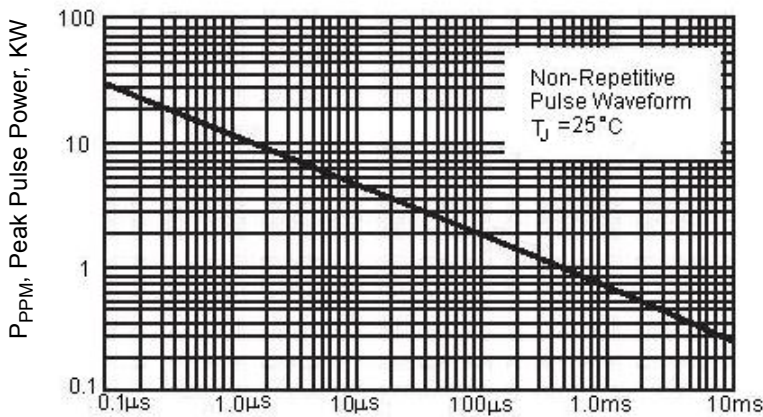
- Notes:
1. Non-repetitive current pulse and derated above  $T_A = 25^\circ\text{C}$
  2. Mounted on copper pad area of  $1.6 \times 1.6$  inches ( $40 \times 40$  mm) per
  3. 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum
  4.  $V_F = 3.5$  V for devices of  $V_{BR} \leq 200$  V and  $V_F = 5$  V maximum for devices of  $V_{BR} > 200$  V

Devices for bipolar applications

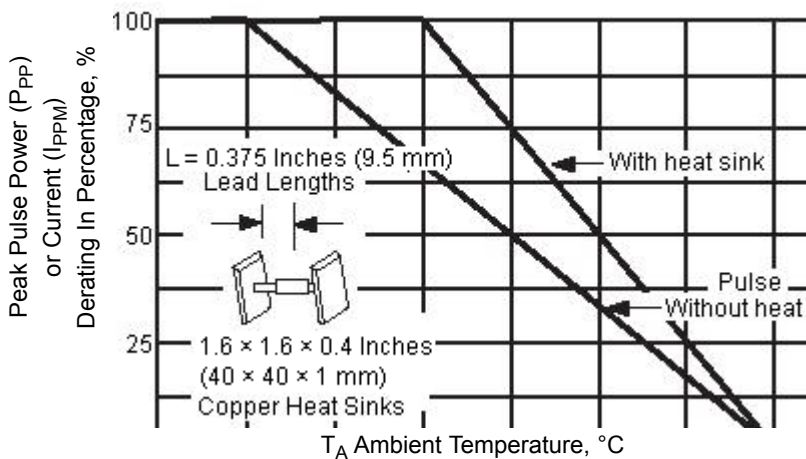
1. For bidirectional use C or CA suffix for types P6KE6.8 through types P6KE400
2. Electrical characteristics apply in both directions

## Ratings and Characteristic Curves

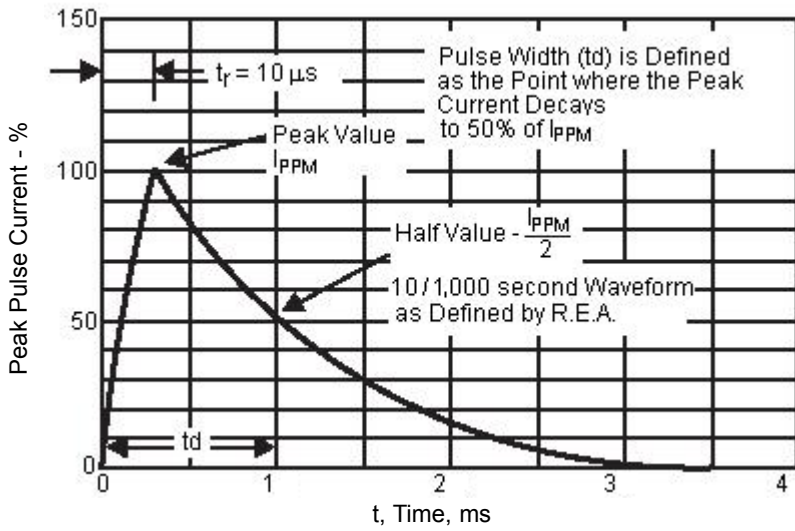
Peak Pulse Power Rating Curve



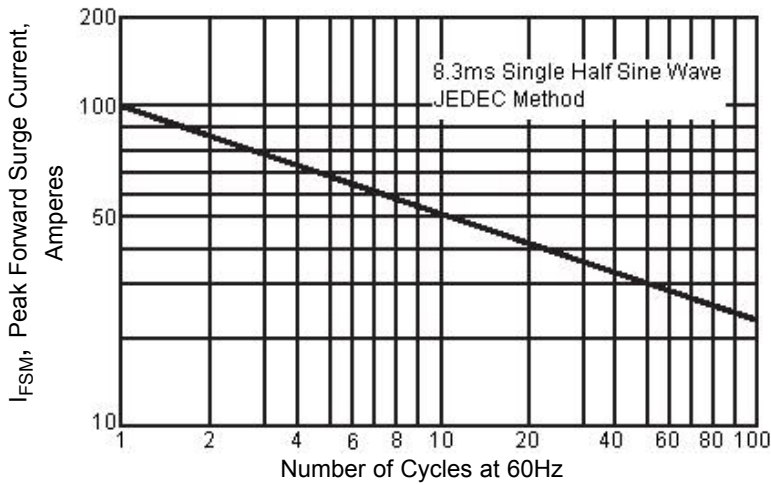
Pulse Derating Curve



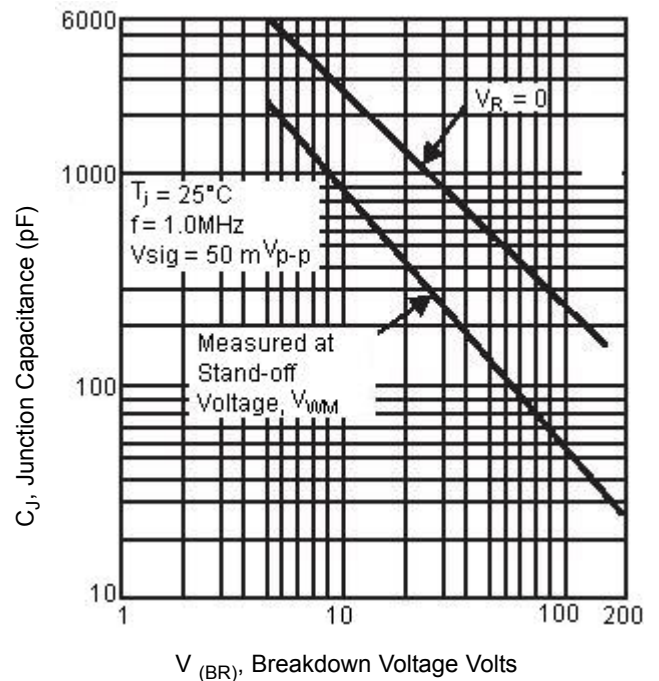
**Clamping Power Pulse Waveform**



**Maximum Non-Repetitive Forward Surge Current Unidirectional Only**



**Typical Junction Capacitance (Unidirectional)**



## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Nominal Voltage (Volts)	Breakdown Voltage		Test Current at $I_T$ (mA)	Stand-Off Voltage $V_{WM}$ (Volts)	Maximum Reverse Leakage at $V_{WM}$ $I_D$ ( $\mu\text{A}$ )	Maximum Peak Pulse Current $I_{RSM}$ (Note 2) (Amps)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (Volts)	Maximum Temperature Coefficient of $V_{BR}$ (% / $^\circ\text{C}$ )	
	$V_{BR}$ (Volts) (Note 1)								
	Minimum	Maximum							
100	95	105	1	85.5	5	4.5	137	0.106	
10	9.5	10.5		8.55	10	43	14.5	0.073	
110	105	116		94	5	4.1	152	0.107	
120	114	126		102		3.8	165		
12	11.4	12.6		10.2		37	16.7	0.078	
13	12.4	13.7		11.1		34	18.2	0.081	
150	143	158		128		3	207	0.108	
15	14.3	15.8		12.8		29	21.2	0.084	
160	152	168		136		2.8	219	0.108	
16	15.2	16.8		13.6		28	22.5	0.086	
180	171	189		154		2.5	246	0.108	
18	17.1	18.9		15.3		25	25.2	0.088	
200	190	210		171		2.2	274	0.108	
20	19	21		17.1		22	27.7	0.09	
22	20.9	23.1		18.8		20	30.6	0.092	
24	22.8	25.2		20.5		19	33.2	0.094	
27	25.7	28.4		23.1		16.8	37.5	0.096	
300	285	315		256		1.5	414	0.11	
30	28.5	31.5		25.6		15	41.4	0.097	
33	31.4	34.7		28.2		13.8	45.7	0.098	
36	34.2	37.8		30.8	12.6	49.9	0.099		
39	37.1	41		33.3	11.6	53.9	0.1		
400	380	420		342	1.1	548	0.11		
440	418	462		376	1.04	600			
47	44.7	49.4		40.2	9.7	64.8	0.101		
62	58.9	65.1		53	7.4	85	0.104		
68	64.6	71.4		58.1	6.8	92			
7.5	7.13	7.88		10	6.4	500	55	11.3	0.061

## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Nominal Voltage (Volts)	Breakdown Voltage		Test Current at $I_T$ (mA)	Stand-Off Voltage $V_{WM}$ (Volts)	Maximum Reverse Leakage at $V_{WM}$ $I_D$ ( $\mu\text{A}$ )	Maximum Peak Pulse Current $I_{RSM}$ (Note 2) (Amps)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (Volts)	Maximum Temperature Coefficient of $V_{BR}$ (% / $^\circ\text{C}$ )
	$V_{BR}$ (Volts) (Note 1)							
	Minimum	Maximum						
8.2	7.79	8.61	1	7.02	200	52	12.1	0.064
9.1	8.65	9.55		7.78	50	47	13.4	0.068
91	86.5	95.5		77.8	5	5	125	0.106

### Notes:

- $V_{BR}$  measured after  $I_T$  applied for 300  $\mu\text{s}$ ,  $I_T$  = square wave pulse or equivalent
- Surge current waveform per Figure 3 and derate
- For bipolar types having  $V_{WM}$  of 10 volts and under, the  $I_D$  limit is doubled
- All terms and symbols are consistent with ANSI/IEEE C62.35

## Part Number Table

DIODE, TVS, 100 V, 600 W	P6KE100A
DIODE, TVS, 100 V, 600 W	P6KE100CA
DIODE, TVS, 10 V, 600 W	P6KE10A
DIODE, TVS, 10 V, 600 W	P6KE10CA
DIODE, TVS, 110 V, 600 W	P6KE110A
DIODE, TVS, 110 V, 600 W	P6KE110CA
DIODE, TVS, 120 V, 600 W	P6KE120A
DIODE, TVS, 120 V, 600 W	P6KE120CA
DIODE, TVS, 12 V, 600 W	P6KE12A
DIODE, TVS, 12 V, 600 W	P6KE12CA
DIODE, TVS, 13 V, 600 W	P6KE13A
DIODE, TVS, 13 V, 600 W	P6KE13CA
DIODE, TVS, 150 V 5%, 600 W	P6KE150A
DIODE, TVS, 150 V, 600 W	P6KE150CA
DIODE, TVS, 15 V, 600 W	P6KE15A
DIODE, TVS, 15 V, 600 W	P6KE15CA
DIODE, TVS, 160 V 5%, 600 W	P6KE160A
DIODE, TVS, 160 V, 600 W	P6KE160CA
DIODE, TVS, 16 V, 600 W	P6KE16A
DIODE, TVS, 16 V, 600 W	P6KE16CA

## Part Number Table

DIODE, TVS, 180 V, 600 W	P6KE180A
DIODE, TVS, 180 V, 600 W	P6KE180CA
DIODE, TVS, 18 V, 600 W	P6KE18A
DIODE, TVS, 18 V, 600 W	P6KE18CA
DIODE, TVS, 200 V, 600 W	P6KE200A
DIODE, TVS, 200V, 600 W	P6KE200CA
DIODE, TVS, 20 V, 600 W	P6KE20A
DIODE, TVS, 20 V, 600 W	P6KE20CA
DIODE, TVS, 22 V, 600 W	P6KE22A
DIODE, TVS, 22 V, 600 W	P6KE22CA
DIODE, TVS, 24 V, 600 W	P6KE24A
DIODE, TVS, 24 V, 600 W	P6KE24CA
DIODE, TVS, 27 V, 600 W	P6KE27A
DIODE, TVS, 27 V, 600 W	P6KE27CA
DIODE, TVS, 300 V, 600 W	P6KE300A
DIODE, TVS, 300 V, 600 W	P6KE300CA
DIODE, TVS, 30 V, 600 W	P6KE30A
DIODE, TVS, 30 V, 600 W	P6KE30CA
DIODE, TVS, 33 V, 600 W	P6KE33A
DIODE, TVS, 33 V, 600 W	P6KE33CA
DIODE, TVS, 36 V, 600 W	P6KE36A
DIODE, TVS, 36 V, 600 W	P6KE36CA
DIODE, TVS, 39 V, 600 W	P6KE39A
DIODE, TVS, 39 V, 600 W	P6KE39CA
DIODE, TVS, 400 V, 600 W	P6KE400A
DIODE, TVS, 400 V, 600 W	P6KE400CA
DIODE, TVS, 440 V, 600 W	P6KE440A
DIODE, TVS, 440 V, 600 W	P6KE440CA
DIODE, TVS, 47 V, 600 W	P6KE47A
DIODE, TVS, 47 V, 600 W	P6KE47CA
DIODE, TVS, 62 V, 600 W	P6KE62A
DIODE, TVS, 62 V, 600 W	P6KE62CA
DIODE, TVS, 68 V, 600 W	P6KE68A
DIODE, TVS, 68 V, 600 W	P6KE68CA
DIODE, TVS, 7.5 V, 600 W	P6KE7.5A

DIODE, TVS, 7.5 V, 600 W	P6KE7.5CA
DIODE, TVS, 8.2 V, 600 W	P6KE8.2A
DIODE, TVS, 8.2 V, 600 W	P6KE8.2CA
DIODE, TVS, 9.1 V, 600 W	P6KE9.1A
DIODE, TVS, 9.1 V, 600 W	P6KE9.1CA
DIODE, TVS, 91 V, 600 W	P6KE91A
DIODE, TVS, 91 V, 600 W	P6KE91CA
TVS - Diode, 41 A, 14.5 V, Unidirectional,	P6KE10A
TVS - Diode, 41A, 14.5 V, Bidirectional,	P6KE10CA
TVS - Diode, 36 A, 16.7 V, Unidirectional,	P6KE12A
TVS - Diode, 36 A, 16.7 V, Bidirectional,	P6KE12CA
TVS - Diode, 28 A, 21.2 V, Unidirectional,	P6KE15A
TVS - Diode, 28 A, 21.2 V, Bidirectional,	P6KE15CA
TVS - Diode, 24 A, 25.2 V, Unidirectional,	P6KE18A
TVS - Diode, 24 A, 25.2 V, Bidirectional,	P6KE18CA
TVS - Diode, 2.2 A, 274 V, Unidirectional,	P6KE200A
TVS - Diode, 2.2 A, 274 V, Bidirectional,	P6KE200CA
TVS - Diode, 18 A, 33.2 V, Unidirectional,	P6KE24A
TVS - Diode, 18 A, 33.2 V, Bidirectional,	P6KE24CA
TVS - Diode, 14.4 A, 41.4 V, Unidirectiona	P6KE30A
TVS - Diode, 14.4 A, 41.4 V, Bidirectional	P6KE30CA
TVS - Diode, 13.2 A, 45.7 V, Unidirectiona	P6KE33A
TVS - Diode, 13.2 A, 45.7 V, Bidirectional	P6KE33CA
TVS - Diode, 12 A, 49.9 V, Unidirectional,	P6KE36A
TVS - Diode, 12 A, 49.9 V, Bidirectional,	P6KE36CA
TVS - Diode, 11.2 A, 53.9 V, Unidirectiona	P6KE39A
TVS - Diode, 11.2 A, 53.9 V, Bidirectional	P6KE39CA
TVS - Diode, 9.3 A, 64.8 V, Unidirectional	P6KE47A
TVS - Diode, 9.3 A, 64.8 V, Bidirectional,	P6KE47CA
TVS - Diode, 7.1 A, 85 V, Unidirectional,	P6KE62A
TVS - Diode, 7.1 A, 85 V, Bidirectional, D	P6KE62CA
TVS - Diode, 6.5 A, 92 V, Unidirectional,	P6KE68A
TVS - Diode, 6.5 A, 92 V, Bidirectional, D	P6KE68CA

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